Pentane, 2,4-dimethyl-3-(1-methylethyl)-

Other names: 2,4-Dimethyl-3-(1-methylethjyl)pentane
2,4-Dimethyl-3-(1-methylethyl)pentane
2,4-Dimethyl-3-isopropylpentane
Inchi: InChI=1S/C10H22/c1-7(2)10(8(3)4)9(5)6/h7-10H,1-6H3
InchiKey: YVYHOOYMDHZALB-UHFFFAOYSA-N
Formula: C10H22
SMILES: CC(C)C(C(C)C)C(C)C
Mol. weight [g/mol]: 142.28
CAS: 13475-79-1

Physical Properties

Property code	Value	Unit	Source
gf	23.56	kJ/mol	Joback Method
hf	-270.85	kJ/mol	Joback Method
hfus	7.56	kJ/mol	Joback Method
hvap	45.60	kJ/mol	NIST Webbook
log10ws	-3.04		Crippen Method
logp	3.571		Crippen Method
mcvol	151.760	ml/mol	McGowan Method
pc	2171.40	kPa	Joback Method
rinpol	915.00		NIST Webbook
rinpol	915.00		NIST Webbook
rinpol	915.10		NIST Webbook
rinpol	915.00		NIST Webbook
rinpol	915.00		NIST Webbook
tb	430.19 ± 0.10	K	NIST Webbook
tc	603.70	K	Joback Method
tf	191.40 ± 0.10	K	NIST Webbook
vc	0.572	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	315.20	J/mol×K	426.44	Joback Method

cpg	392.64	J/mol×K	574.15	Joback Method
cpg	378.44	J/mol×K	544.61	Joback Method
cpg	363.61	J/mol×K	515.07	Joback Method
cpg	348.14	J/mol×K	485.53	Joback Method
cpg	332.01	J/mol×K	455.98	Joback Method
cpg	406.22	J/mol×K	603.70	Joback Method
dvisc	0.0001996	Pa×s	426.44	Joback Method
dvisc	0.0003010	Pa×s	379.11	Joback Method
dvisc	0.0005103	Pa×s	331.78	Joback Method
dvisc	0.0010315	Pa×s	284.45	Joback Method
dvisc	0.0027615	Pa×s	237.12	Joback Method
dvisc	0.0120813	Pa×s	189.79	Joback Method
dvisc	0.1409238	Pa×s	142.46	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.40525e+01
Coeff. B	-3.48354e+03
Coeff. C	-6.09530e+01
Temperature range (K), min.	314.03
Temperature range (K), max.	459.48

Sources

The Yaws Handbook of Vapor Pressure: https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

Joback Method: https://en.wikipedia.org/wiki/Joback_method

KDB: https://www.cheric.org/files/research/kdb/mol/mol165.mol

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C13475791&Units=SI

Legend

cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume